

Gram : TECHMUSEUM

BIRLA INDUSTRIAL & TECHNOLOGICAL MUSEUM
 COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH
 19A, GURUSADAY ROAD, CALCUTTA-19.

Curator-in-Charge : Shri S. K. Ghose

ANNUAL REPORT - 1967

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BIRLA INDUSTRIAL & TECHNOLOGICAL MUSEUM
CALCUTTA.

ANNUAL REPORT 1967

A. INTRODUCTION

The museum recorded a visitor attendance of 2,16,441 during the year 1967 - the maximum figure ever reached since its inauguration. The previous maximum figure was 2,16,207 in 1963. Besides this, about 4,69,801 people visited the mobile science exhibitions arranged by the museum in various districts of West Bengal and parts of Bihar. Co-operation received from the people and various educational institutions in this respect is very encouraging. 452 organised school groups covering 19433 students visited the museum. 450 film shows on scientific and technical subjects were conducted during the year under review.

The gallery on 'Nuclear Physics' has been renovated. Considerable progress has also been made towards setting up a new gallery on 'Transport'.

Thirteen-day Fifth Museum Camp - 1967 on "Education and Presentation", organised by the Union Ministry of Education, was held in the museum and attended by about 100 leading museologists, educational officers from all over India. One of the important recommendations unanimously agreed upon by the participants of the Camp is as follows :-

"The example of Birla Industrial & Technological Museum in the use of extension exhibitions and particularly of Museobus for education in village schools and rural centres should be commended highly and should be followed according to institutional needs as soon as possible by other museums in different fields".

BITM anniversary was celebrated during May 27, 1967 by drawing a programme which included, among others, an exhibition of a 'Robot' or 'Yantra Danab' for the first time, special demonstrations for science teachers of different

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institutes, recording of visitors' music, visitors' participation in television programme etc.

A scientific model making competition for school students was organised to develop creative aptitudes amongst school students and to encourage them in undertaking scientific investigations.

Plan is also being finalised to set up two mobile science museum units for a prolonged period in the districts of Midnapore and Purulia of West Bengal and they are expected to be opened in January 1968.

During the year under review, greater emphasis was laid on the extension services and this has led to a greater co-ordination with the museum and other educational institutions.

B. OBJECTIVES

The main objectives of the Birla Industrial & Technological Museum are :

- i) to portray the history of science and technology,
- ii) to create scientific awareness among the common people,
- iii) and to supplement science education in schools.

C. MUSEUM GALLERIES

The present ten galleries in the museum are as follows :

1. Nuclear Physics
2. Motive Power
3. Popular Science
4. Mining
5. Copper
6. Petroleum
7. Iron & Steel
8. Electricity
9. Television & Electronics
10. Communication.

All the galleries have suitable static and working models, animated posters, dioramas and charts. Visitors are allowed to operate many of the exhibits. The museum has also its own staff of Guide Lecturers who demonstrate the exhibits to the visitors.

D. CHANGES IN THE GALLERIES

Nuclear Physics:

The renovated gallery on Nuclear Physics was opened by Dr. Triguna Sen, Union Minister of Education, on

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October 3, 1967. With the help of a number of static and working models, dioramas, demonstration exhibits and actual objects, the re-organised gallery seeks to convey to the visitors the fundamental concept of an atom, relation between matter and energy, the use of Geiger Counter for detecting radio active minerals, reactors and uses of atomic energy etc.

Some of the interesting exhibits displayed in the gallery are : Model of Apsara - India's first Nuclear Reactor, exhibit relating to cyclotron at the Saha Institute of Nuclear Physics, Calcutta, exhibit showing application of radio-isotopes in research and agriculture at Bose Institute, Calcutta, Kalyani University, Central Jute Research Institute, Neelgunge, Barrackpore, and radiation shielding by glass made at the Central Glass & Ceramic Research Institute, Calcutta.

E. ACQUISITION OF MODELS & EXHIBITS

Models and exhibits for different galleries and mobile units as shown in appendix I have been added to the collection of the museum during the year 1967.

F. MOBILE SCIENCE EXHIBITION

The year has been significant enough in that Mobile Science Exhibitions organised by the museum since 1965 have become very popular in the country. The Units have proved very effective in imparting science education in rural areas and have been appreciated by the people. The Unit No. 1, "Our Familiar Electricity", consists of 28 exhibits showing the history of electricity and its use in every daylife. The Unit No. 2, "Transformation of Energy" also consists of 28 working exhibits. In case of Unit No. 1, the exhibits are carried by truck and are set up in School halls. A portable generator set is also available, if required. The Unit No. 2 is housed in a specially designed Museobus 30 feet long and 8 feet wide, which itself serves as an exhibition hall.

In 1967, the first Unit travelled through 54 places covering 1,400 km. and has been visited by 2,41,195 people. The 2nd Unit visited 77 places and was seen by 1,85,306

people and travelled 2,681 km. Temporary exhibitions with assorted exhibits were also held in 7 places and 43,300 people visited them.

G. VISITORS TO MUSEUM AND ITS MOBILE UNITS

- Attendance:- 1) The attendance of visitors in the museum was 2,16,441 including 452 organised groups covering 19,433 students from different institutions of the country.
- 2) About 4,69,801 lakhs of people including students visited the Mobile Science Exhibitions, arranged by the museum in 138 places of West Bengal and Bihar.

H. EDUCATIONAL ACTIVITIES

- (a) Demonstration Lectures: Special demonstration lectures on subjects from school curriculum were arranged in the museum auditorium and in schools regularly on the following subjects ;
- i) Principles of Electric Generator
 - ii) Light and our eyes
 - iii) Properties of liquid
 - iv) From heat to heat engines.
 - v) Laws of motion

Two more sets on 'Eclipses' and 'Acids, Bases and Salts,' are also ready for demonstration lectures.

During the year 1967, lectures have been given before 65 groups in the museum auditorium and were attended by 2790 students and teachers. The lectures were also arranged \angle^{**}

- (b) Film Shows : The necessity of adopting audio-visual methods in imparting knowledge to the people is well recognised. Popular scientific and technical film shows are held in the museum 8 times a week, 4 of them being reserved for School students. These are well attended. Besides the above regular shows some special film shows were arranged in the museum with the films borrowed from United States Information Services, the British Information Services, different Consulates, Film Division, \angle^{**} out-doors in 22 schools and these were attended by 1774 students and teachers.

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Govt. of India, etc.

- (c) Popular Lectures: A) Dr. Brijen K. Gupta, Department of History, Brooklyn College of the City University, New York, delivered a popular lecture on "Tradition in Science in India's development" on January 31, 1967.
- B) Shri S.K.Ghose, Curator-in-Charge, delivered a popular lecture on 'Communication through ages' in Barsul Vijnan Mandir, Burdwan on January 27, 1967.
- C) Shri S.K.Ghose, Curator-in-Charge delivered a lecture on "Early Electric Telegraph" at the Institute of Radio Physics and Electronics, University College of Science and Technology, Calcutta.
- (d) EXHIBITIONS
- Birla Industrial & Technological Museum organised at its premises an exhibition entitled "Museums of West Bengal" from January 3 to 31, 1967. 16 museums and institutes including Indian Museum, Central Glass and Ceramic Research Institute, Jyotosh Museum of Indian Art, Rabindra Bharati Museum, Birla Planetarium participated in the exhibition. A variety of collections on art, science, archaeology, handicrafts, folkart, optical glass, etc. were on display. Specimens of fine wood carvings, bamboo products, clay and wax models, etc. fabricated by the students of Ramkrishna Mission Vidyalaya, Narendrapur, were included in the collection. A feature of the show was the rare photographs, publications etc, relating to life and works of Rabindra Nath Tagore and Netaji Subhas Chandra Bose.
- Some of the rare and valuable exhibits were : Personal effects of Rishi Bankim Chandra i.e. Shawl, Shamla and an original letter written by him, some of the articles used by great novelist, Sarat Chandra i.e. writing desk, ink stand, calling bell and manuscript sheets of his novel 'Biprodas' a forage cap worn by Netaji Subhas Chandra Bose as Supreme Commander Indian National Army.

Indian National Army.

(e) SCIENTIFIC MODEL MAKING COMPETITION FOR SCHOOL STUDENTS

A scientific model making competition for school children was organised to develop creative aptitudes amongst students. A scientific model making competition for school children was organised to develop creative aptitudes amongst students. An exhibition of models made by school students from different institutions including 'Creative Abilities Centre' run by this museum participated in the said competition where 40 interesting models prepared by the students on scientific subjects were displayed for two weeks in the month of August, 1967. During this period 3052 students, from 65 organisations, participated in the competition. Mr. S. K. Ghose, Secretary, Indian Science Congress Association, and Shri S. K. Ghose

Curator-in-Charge of the Museum, judged the models which were in general of high quality and in all 11 prizes valued Rs. 500/- were awarded to winners in the form of books, instruments etc.

Some of the prize winning exhibits displayed in the competition were : Drilling and extraction of Petroleum, Rocket Launcher, Plant growth measuring apparatus, How paper is made Plant and Animal cell, Microphone, Lozenge seller, Optical Micrometer etc. Andrews School, Calcutta was the recipient of the 1st and 2nd prizes and 'Science for Children' also shared the 2nd prize. On Saturday, September 2, 1967 Prof. H.C. Guha, Vice-Chancellor, Jadavpur University presided over the prize giving ceremony in connection with the above competition and also for the 'Competitive Students' Seminar held earlier in the museum.

I. 5TH MUSEUMS CAMP ON 'EDUCATION & PRESENTATION' ORGANISED BY THE MINISTRY OF EDUCATION, GOVT. OF INDIA

Dr. T. Sen, Union Education Minister, inaugurated the 5th Museums Camp on 'Education & Presentation' in the auditorium of the Birla Industrial & Technological Museum, Calcutta on November 5, 1967.

Prof. Sher Singh, Union State Education Minister, also addressed the delegates and observers of the Camp in BITM on November 16, 1967.

The main object of the 13 day Camp was to intensify and foster a closer liaison between museums and schools and colleges and to equip the concerned personnel with the necessary techniques and also help them compare and exchange notes.

About 100 participants and observers including expert museologists and education officers from all over India attended different programmes of the Museum Camp from November 5 to 17, 1967.

The museums camp programme included, among others, the following :

Honour of pioneer museologists of India by Dr. S.K.Mitra, General Secretary, Asiatic Society; discussions on different aspects of museums led by Dr. (Mrs.) Grace Morley, Adviser on Museums, Govt. of India, Dr. R.C.Mazumder, eminent historian ; Prof. H.C.Guha, Vice-Chancellor, Jadavpur University; Prof. D.P. Ghosh, Curator, Asutosh Museum; Prof. V.H.Bedekar, Head of the Dept. of Museology, University of Baroda; Shri A.K.Bhattacharya, Director, Indian Museum; Shri A.Bose, Officer-in-Charge, Visvesvaraya Industrial & Technological Museum, Shri S.K.Ghose, Curator-in-Charge, Birla Industrial & Technological Museum , Calcutta

Camp participants were taken round the Workshop and Modelling Section of Birla Industrial & Technological Museum to acquaint them with different stages of fabrication of the exhibits for galleries, mobile units and other educational programmes arranged by the museum. One of the most interesting and effective programmes was arranged when the delegates were taken to an interior village to see the mobile science museum organised by the Birla Industrial & Technological Museum and to study the reaction of the villagers and local students . With the help of working models and exhibits demonstration lectures on art and science subjects based on school curriculum were also arranged for the Camp participants in schools/museums.

An important recommendation unanimously agreed upon by the participants of the Camp is :

"The example of Birla Industrial & Technological Museum in the use of extension exhibitions and particularly of Museo-bus for education in village schools and rural centres should be commended highly and should be followed according to institutional needs as soon as possible by other museums in different fields."

CELEBRATION OF THE 20TH ANNIVERSARY OF ICOM AND 2ND INTERNATIONAL CAMPAIGN FOR MUSEUMS

The Museum took part in the 2nd International Campaign for Museums on the occasion of the 20th anniversary of ICOM by arranging special programmes between 3rd October and 29th October. The programme was organised in keeping with the spirit of the circular issued by ICOM on this occasion.

The celebration was inaugurated on the 3rd October, 1967 by Dr. Triguna Sen, Education Minister of Govt. of India. The inauguration ceremony was attended by all museum leaders of Calcutta and other eminent people.

The month long celebration programme during the campaign period included, among others, the following :

(1) Exhibition on Museums: 26 museums including Indian Museum, Victoria Memorial Hall, Asutosh Museum of Indian Art, Rabindra Bharati Museum, Netaji Museum, Birla Planetarium, Birla Academy of Art & Culture of Calcutta, National Museum, Delhi, Falar Jung Museum, Hyderabad, Central Museum, Pilani (Rajasthan), Visvesvaraya Industrial and Technological Museum and Mysore Govt. Museum, Bangalore State Museum, Lucknow, Prince of Wales Museum, Bombay participated in the exhibition. In addition, the activities of the International Council of Museums and some of the famous museums of the world including Deutsches Museum, Munich, Museum of Science and Industry, Chicago, Natural History Museum, London etc. were on display.

(2) Exhibition of mobile units : The museum has two mobile units carrying working exhibition through rural and urban areas. Both of them were displayed in the Museum on this occasion. Mobile demonstration units of other organisations like Small Scale Industries, Ceramic Industries etc. also joined this exhibition.

(3) Seminar: Seminar with the Heads of School of Calcutta and its neighbourhood on "What Education leaders want of museums" was held on the 4th October. In this seminar a sample 'demonstration lecture for school students' was shown by the museum. All heads of schools present in the seminar actively participated in the discussion as to how such programmes could be adopted in schools. It was decided to draw up some concrete programmes for opening science hobby centres in different schools.

(4) Publicity of the Campaign: Large decorative banners were created in 15 important places in the city and wide publicity was given through press. Special announcement was made by All India Radio, Calcutta on the occasion.

(5) Film shows : Popular films which have some bearing on museums were shown to visitors during the campaign period.

(6) Guided tour to Workshop: Special conducted tours to the galleries and workshop of the museum were arranged for visitors in groups.

(7) Special visits: Important personalities (writers, scientists, educationists, journalists, artists etc.) visited the museum by special invitation.

(8) Visitors: The number of visitors to this museum during the Campaign period was 25,000 against normal monthly average of 14000 only.

K. SPECIAL TRAINING COURSE

a) Creative Abilities Centre.

The Creative Abilities Centre already started by the museum to develop scientific aptitudes amongst the students progressed satisfactorily. At present 60 students from various schools are on the rolls in this centre and on an average 20

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students come every day for making models and exhibits. 4 students received National Science Talent search scholarships on the merit of exhibits which they made in this Centre. Besides, 5 students of the Centre got prizes in the 'Scientific Model Making Competition for School Students- 1967' organised by this Museum.

b) Visit to Museum Workshops.

Special conducted tours to the Workshops of the museum was arranged for visitors including students during celebration of the 20th anniversary of ICOM and 2nd International Campaign for Museums in BITMI from October 3 to 29, 1967.

L. ANNIVERSARY CELEBRATIONS

The eight anniversary of Birla Industrial & Technological Museum, Calcutta was celebrated during May 2 to 7, 1967. The programme included, among others, an exhibition of a 'Robot' or 'Yantra Drabb' with electronic control for the first time; special demonstrations for science teachers of different institutes; recording of visitors' music; visitors' participation in television programme; special film shows every evening; opportunity to student of different schools to demonstrate exhibits in the museum galleries, etc.

Record numbers of visitors amounting to 14,033 visited the museum during the week and evinced keen interest in the programme arranged by the museum. During this week, the visiting hours of the museum was extended by 3 hours.

M. TECHNICAL ASSISTANCE RENDERED TO OTHER ORGANISATIONS:

Following exhibits were made by BITMI for other organisations:

- 1) Model of "Ratneau Steam Turbine" for Visvesvaraya Industrial & Technological Museum, Bangalore.
- 2) Exhibit on "Test your knowledge on Petroleum" for Central Museum, Pilani, Rajasthan.
- 3) Model of "Meco-Moore Cutter Loader" for Banaras Hindu University, Banaras.
- 4) Repair of a Television Unit installed by M/s. International Combustion (India) Private Limited in Chandrapura Thermal Power Station of DVC.

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N. GENERAL INFORMATION ABOUT THE MUSEUM :

(a) LIBRARY: The stock of the library comprises books on science & Technology. In view of the dearth of good technical public libraries in the vicinity, it was considered fit to open the stock to outsiders so that maximum benefit could be derived from the stock. So, the library was opened to the public on July 6, 1966 and so far 366 members, mostly students have enlisted as members of the library and have been using it as a reading room to their advantage. The stock of books, periodicals, films etc. in the library are as under :-

Books	... 3,943
Important journals received	... 82
Technical films	... 113
Pamphlet	... 1,808
Photographs	... 1,000
Bound Periodicals.	... 319

(b) Museum hours :

10.00 a.m. to 5.30 p.m. upto December, 3, 1967.

10.00 a.m. to 5.00 p.m. with effect from December 5, 1967.

(c) Admission :

- 1) Tuesdays to Saturdays ... Free
- 2) Sundays : i) Rs. 0.25 paise .. For general public.
ii) Rs. 0.05 paise .. For organised student groups.

(d) Television shows : Thrice daily at 11-30 a.m., 2.30 p.m. and 4.30 p.m.

D. DISTINGUISHED VISITORS:

	<u>Name</u>	<u>Date of Visit</u>
1)	Dr. Brijen K. Gupta, Department of History, Brooklyn College of the City University, New York.	January 31, 1967.
2)	Dr. J. Stepkova, Oriental Numismatic Collections, Nprstek Museum, Prague.	February 1, 1967.
3)	Dr. T. Horvath, Director, Ference Hopp Museum, Budapest, Hungary.	March 2, 1967
4)	Mr. Richard Heggie, Representative, Asia Foundations, India.	March 16, 1967.

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Name	Date of Visit
5) Prof. Shet Singh, Union State Education Minister.	April 16, 1967.
6) Dr. Triguna Sen, Education Minister, Government of India.	October 3, 1967.
7) Dr. Juniti Kumar Chatterji, National Professor.	October 3, 1967.

P. SALIENT FEATURES OF THE APPROVED PLAN DURING THE YEAR :

1) Setting up of Transport Gallery

Setting up of a new gallery on Transport in this museum was approved by the Planning Committee several years back. Accordingly acquisition of exhibits started and a good number of models, exhibits etc. have been procured mostly by donations and a few by purchase. The gallery will depict the sequential development of land, water and air transport. Working exhibits will also be presented to demonstrate the basic principles of working of the transport vehicles.

The construction of the main hall for the Transport Gallery was completed on 31.3.66. It is now necessary to equip the gallery with the exhibits already acquired or fabricated and those likely to be further acquired or fabricated in the meantime. The museum has already got valuable collections like Vintage Car used by Shri J.C. Bose, Rolls Royce Car of 1923, Tank type steam locomotive of 1890, Horse drawn tram car donated by Calcutta Tramway Company, models of W.G. type L comotive, Air Conditioned coach, Or Muion etc. donated by Eastern Railway, a number of valuable exhibits received from Science Museum, London. A recent addition to this section is an attractive electrically operated working Railway model. The gallery is expected to open in January, 1970. Altogether there will be about 125 models and exhibits in the gallery.

2) Extension of Popular Science Gallery:

The planning for the work of extension of Popular Science Gallery was approved. The existing gallery measures about 1861 sq.ft. and a second hall of 962 sq.ft. is available for the

extension . The estimated expenditure for fabrication of exhibits and display including electrical installation is Rs. 30,000/-.

Also other there will be about 63 models and exhibits on Mechanics, Light, Popular Electronics, Mathematics and Sound in the extended gallery.

- 3) Setting up of 8 New Mobile Science Museum Units in the districts of West Bengal in 1968. The first two will be opened in Midnapore and Purulia in January, 1968.
- 4) Continuation of School Demonstration Lecture programme by purchasing a second vehicle in 1968-69.

Q. HONOURS AND AWARDS :

- 1) Shri S.K.Ghose, Curator-in-Charge, has been elected Vice-President of the Museum Association of West Bengal.
- 2) Shri S.K.Ghose, Curator-in-Charge, has been elected member of N.C.M.E. under the International Council of Museums, Paris.
- 3) Shri S.K.Ghose, Curator-in-Charge has been offered visiting lectureship in the Department of Museology, University of Calcutta.
- 4) Shri S.K.Ghose, Curator-in-Charge was elected Honorary Vice-Chairman, 5th Museums' Camp - 1967, organised by the Union Ministry of Education.

R. REVIEW ARTICLES, POPULAR SCIENCE ARTICLES, ETC. PUBLISHED :

- 1) "The Birla Industrial & Technological Museum, Calcutta." - Shri S.K.Ghose, Curator-in-Charge - Museum, a quarterly review published by UNESCO - Volume XX No. 3, 1967.
- 2) "Mobile Science Museum" - Shri C.S.Pai, Curator - Bulletin of Museums Association, West Bengal - 1967.
- 3) "Preparations of School Educational programmes in Museums" - its technical background - Shri S.K.Bagchi, Curator, Bulletin of the West Bengal Head Masters' Association - No. 10 Vol. XVI, October, 1967.
- 4) "What a museum can do for education" - Shri S.K.Ghose, Curator-in-Charge, Bulletin of the West Bengal Head-Masters' Association. No. 10 Vol.XVI, October 1967.

- 5) "Birla Industrial & Technological Museum" - Shri S.K.Ghose, Curator-in-Charge, What's on in Calcutta, Feb. 10, 1967.
- 6) "Popularisation of Science" - Shri S.K.Ghose, Curator-in-Charge, What's on in Calcutta, Aug. 11, 1967.

S. (a) Staff :

Scientific (Jr. Scientific Ass't. and above ..	26
Auxilliary (Technical) ..	81
Administrative & House Keeping ..	38
Class IV ..	77
Total	<u>222</u>

- (b) Patents filed - Indian Patent No. - 106206 : Improvements, in or relating to electrical batteries S/s. S.K.Ghose, Curator-in-Charge, C.S.Pai, Curator, J.K.Guha Barman, Guide Lecturer.

MEMBERS OF THE EXECUTIVE COUNCIL, BITEM

Chairman

Shri M.P.Birla,
15, India Exchange Place, Calcutta.

Members

Shri Arvind N. Mafatlal,
Mafatlal House, Back Bay Reclamation, Bombay

Dr. Moti Chandra,
Director, Prince of Wales Museum of
Western India, Bombay.

Dr. (Mrs.) Grace Morley,
Adviser on Museums, Ministry of Education,
Government of India, New Delhi.

Shri A.K.Bhattacharyya,
Director, Indian Museum, Calcutta.

Chairman,
All India Manufacturers' Organisation, Bombay.
(Shri B.D.Somani)

Shri B.N.Gupta,
President, Visvesvaraya Industrial Museum,
Society, Bangalore.

Director-General,
Scientific & Industrial Research, New Delhi.
(Dr. Atma Ram).

Financial Adviser to C.S.I.R.,
New Delhi.

Officer-in-Charge,
Visvesvaraya Industrial & Technological Museum,
Bangalore-1
(Shri A.Bose)

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Curator-in-Charge,
Birla Industrial & Technological Museum, Calcutta.
(Shri A.K.Ghose)

SCIENTIFIC SUB-COMMITTEE

- 1) Prof. H.C.Guha,
Vice Chancellor, Jadavpur University. ... Chairman.
- 2) Prof. G.C.Sen,
Jadavpur University. ... Member
- 3) Director,
Indian Museum, Calcutta.
(Shri A.K.Battacharyya) ... Member.
- 4) Curator,
Birla Planetarium,
Calcutta. (Shri R.Subramanian) ... Member.
- 5) Officer-in-Charge,
Visvesvaraya Industrial &
Technological Museum.
(Shri A.Ghose) ... Member
- 6) Director of Public Instru-
ments, Government of West Bengal.
(Shri P.C.Mukherjee) ... Member
- 7) Curator-in-Charge,
Birla Industrial & Tech-
nological Museum. (Shri S.K.Ghose) ... Member

BUILDING & FINANCE SUB-COMMITTEE

- 1) Shri H.P.Birla. ... Chairman.
- 2) Superintending Engineer,
Calcutta, Central Circle II,
(Shri Ramu Dial) ... Member.
- 3) Director-General,
CSIR, Rafi Marg,
New Delhi. ... Member.
- 4) Financial Advisor to
CSIR, Rafi Marg,
New Delhi. ... Member
- 5) Officer-in-Charge,
VITM, Bangalore.
(Shri A.Bose) ... Member
- 6) Curator-in-Charge,
BITM, Calcutta.
(Shri A.K.Ghose) ... Member

APPENDIX I

1. ACQUISITION OF MODELS AND EXHIBITS :

a) Donation :

Donated by :

i) Speak-o-phone .. 2 Nos. M/s. Betar Bhavan, Hooghly.
(complete with accessories)

b) On Loan :

i) Scintillation Counter with
amplifier & Samples of rice
produced by mutation. .. Bose Research Institute.

ii) Radiation Sheilding Glass
pieces. ... Central Glass & Ceramic
Research Institute.

iii) Photographs of Particle
accelarator & Cyclotron .. Saha Institute of
Nuclear Physics.

iv) Photographs showing Mutation
of Jute Plants & arrangement
in a Jamme Garden. ... Central Jute Research
Laboratory, Neelgunge.

v) Radioautogram of a leaf & a
photograph of a paper chromatog. graph showing,
fixation of CO_2 tagged with C^{14} , and its analysis. Kalayani University.

2. PURCHASE :

1. a) 10 Line P.A.X ... 1 No. From I.T.I. Bangalore.

b) Auto Desk Telephone ... 2 Nos.

c) Transparent Phone ... 1 No.

d) Handset Moulding ... 1 No.

e) Bell Gong ... 1 No.

f) Transmitter Inset. ... 1 No.

g) Mouthpiece. ... 1 No.

h) Far-Piece. ... 1 No.

i) Receiver Inset. ... 1 No.

j) Diaphragm ... 1 No.

2. Winshurst Machine, hand driven,
disc diameter 10 inches.

3. Model of Human Brain dissectable, encased
inside Adult Human Head.

4. Model of Grinder

5. Model of Circular Saw

6. Model of a Railway Track(Brass) of $4\frac{1}{2}$ " gauge for running
electric trains, including arrangements for electric signalling,
track changing, telephone, communication & token & tablet
instruments etc.

7. Exhibit on total internal reflection of light-from VITM,
Bangalore.

8. Philips Stroboscope.

PURCHASED FROM P & T DEPTT. FOR COMMUNICATION GALLERY :

<u>Sl. No.</u>	<u>Name of Stores.</u>	<u>Quantity.</u>
1)	High Speed Relay, A.T.M.	.. 7 Nos.
2)	Telephone, Edison (Wester)	.. 1 No.
3)	Resistance Box, 5000 ohms.	.. 1 No.
4)	Railway Signalling Indicator.	.. 1 No.
5)	Blake Transmitter	.. 1 No.
6)	Astatic Wattmeter	.. 1 No.
7)	Standard of Self Inductance, No. 5695	1 No.
8)	Electric Bell in Box.	.. 1 No.
9)	Date and Sealing stamp in wooden box	1 No.
10)	Ampere Gauge (Kelvins pattern)	.. 1 No.
11)	Sounder	.. 1 No.
12)	Telephone Relays (S.G.Brown)	.. 2 Nos.
13)	D.C.Relay.	.. 1 No.
14)	Magnete Indicator	.. 2 Nos.
15)	Key, Signalling.	.. 1 No.
16)	Tangent Detector Galvanometer	.. 1 No.
17)	Electric Bell, Pillar Pattern.	.. 1 No.
18)	Relay (Balckey Emmott & Co.)	.. 1 No.
19)	Transmitter for Railway block Signalling	3 Nos.
20)	Electro-scope.	.. 1 No.
21)	Wall Set Telephone, with bell push, without receiver	.. 2 Nos.
22)	Exchange Indicator, 5 lines.	.. 1 No.
23)	Rheostat.	.. 1 No.
24)	Key for Transmitter, Taper Ptn.	.. 2 Nos.
25)	Relay, Billinguall, Melbhuis Ptn.No.1399.	2 Nos.
26)	Commutator, Brogualis.	.. 2 Nos.
27)	Galvanometer	.. 2 Nos.
28)	Galvanometer with key.	.. 2 Nos.
29)	Indicator, 10 lines.	.. 1 No.
30)	Galvanometer, Differential.	.. 1 No.

contd.

31) Magneto Box.	..	1 No.
32) Magneto Wall Set.	..	1 No.
33) Lightning Protector, Lodges Patent		1 No.
34) Lightning Discharger for 2 lines		2 Nos.
35) Condenser Separator Box		1 No.
36) Cambridge Magnetic Bridge Parameameter	1 No.	
37) Barrows Circle for determining in- clination and total force.		1 No.
38) Klaeschnidt Perforator(Greed & Co.Ltd., London)		1 No.
39) Differential Relay.	..	3 Nos.
40) Transmitter, Telegraphic (Middle & Co., Paris.)	..	1 No.
41) Morse Signalling alphabet board.		1 No.
42) C.B.Wall Set & Coin Box mounted on board	- 2 Nos.	
43) Murray Transmitter, automatic system, 1906	- 4 Nos.	
44) Transmitter, Weight driven(Siemens & Börs.)	..	2 Nos.
45) Bridge.	..	1 No.
46) Printer for Wheatstone receiver ..		1 No.
47) Short Circuiting bell	..	1 No.
48) Relay Double Contact.	..	1 No.
49) Coin Box.	..	1 No.
50) Magneto Wall Set, B.T.Type.	..	5 Nos.
51) Rly.Signalling block for up and Dn.Trains.	- 4 Nos.	
52) Receiver, Pillar Pattern(Asorted)		14 Nos.

MODELS & EXHIBITS PREPARED DEPARTMENTALLY

Motive Power Gallery:

- 1) Model of Mercer rotary radial engine.
- 2) Models of different types of water wheels displayed in a panel.
- 3) Wire sculpture on Hydro-electric Power generation.
- 4) Model of a steam generating unit(similar to Bandel Thermal Power Project Boilers)
- 5) Model of Savery's Steam Engine.
- 6) Assembling of friction gears in one panel.
- 7) Model of a Bramah Hydraulic Press.
- 8) One relief sculpture showing the advent of steam power for the service of man,

contd..

- 9) One relief sculpture showing the steam power in action in service of man.
- 10) Model on Gas Turbine set.

Popular Science Gallery

- 11) Sympathetic Pendulum. 2 Nos.
- 12) Exhibits showing generation of electricity by Atomic Power.
- 13) Expansion by Heat.
